

Eric F. Pastor
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Re: Gulfco Marine Maintenance Superfund Site, Freeport, Texas
Unilateral Administrative Order, CERCLA Docket No. 06-05-05
Remedial Investigation and Feasibility Study Work Plan, Field Sampling Plan, and
Quality Assurance Project Plan Comments

Comments

Dear Mr. Pastor,

The Gulfco Marine Maintenance Respondents submitted a Remedial Investigation and Feasibility Study (RI/FS) Work Plan, Field Sampling Plan (FSP), and Quality Assurance Project Plan (QAPP), all dated October 6, 2005, to the Environmental Protection Agency (EPA). Please find enclosed the review comments on these documents. The comments reflect the reviews conducted by the Texas Commission on Environmental Quality (TCEQ), EPA, and the Natural Resource Trustees, including the National Oceanic and Atmospheric Administration (NOAA), the U.S. Fish and Wildlife Service, and the Texas General Land Office.

If you have any questions, please contact me at (214) 665-8318, or send an e-mail message to miller.garyg@epa.gov.

Sincerely yours,

Gary Miller
Remediation Project Manager

cc: Susan Roddy
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Jessica White (NOAA)

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Gulfc0 Marine Maintenance Superfund Site (Site)

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY (RI/FS) WORK PLAN

General Comments

1. As previously stated in comments on the draft Screening Level Ecological Risk Assessment (SLERA), the soils in the area south of Marlin Avenue shall be ecologically evaluated. Proposed sampling and analysis of the southern area shall incorporate the data needs of conducting an ecological evaluation. It is understood that the area is zoned for commercial/industrial land use and will likely remain so. Nevertheless, this area may be a source area for other media that may be presenting an ecological risk and there is some existing ecological habitat that necessitates evaluation. After this evaluation, any decisions made on ecological risk/remediation that include the zoning aspect would be risk management decisions.
2. Although data collected during the Hazard Ranking System (HRS) and screening site inspection (SSI) processes can be included in the risk assessment, this data alone is insufficient to quantify risk. Initial studies such as an SSI, which are used in the preparation of the HRS documentation, are not as detailed in scope as an RI/FS delineation of the nature and extent of contamination. They are used as screening tools to identify those sites that represent the highest priority for further investigation and possible cleanup under the Superfund program. Their purpose is not to fully characterize the source and the extent of the contamination at a site or to define site risks to human health and the environment. This is accomplished during the RI/FS. The data from the initial studies shall not be used to define Site risks, or to rule out chemicals of potential concern.
3. Preliminary data was provided in Tables 2 -11 for soil, groundwater, surface water and sediment. However, only on-site samples were depicted on the Site map in Figure 2. The RI/FS Work Plan (Work Plan) shall be revised to provide a Site map that includes the locations of the off-site and background samples listed in the tables.
4. The conceptual site model(CSM) does not include the surface water pathways (Figure 9) from the freshwater ponds on the northern part of the Site. The current draft CSM does include estuarine surface water pathways, however, the potential exposures do not include ingestion of media (surface water) for birds, carnivorous fish, and mammals, which is a potential pathway. The CSM shall be revised to include this.
5. The Work Plan shall include soil sampling at the residential properties in the proximity of the Site. In addition, sampling of the idle water supply well located adjacent to the Site shall be conducted. These ground water samples shall be analyzed for volatile organic

compounds, semi-volatile organic compounds, pesticides, polychlorinated biphenyls, and metals.

6. The Site hydrogeology described in Section 2.1.2 of the Work Plan indicates that groundwater resources at the Site may warrant designation as Class 1 or Class 2 groundwater under 30 TAC 350.52(1) and (2), respectively. If so, relevant protective concentration levels (PCLs) (e.g., $^{GW}Soil_{Ing}$ and $^{GW}GW_{Ing}$) shall be included in the appropriate Preliminary Screening Value (PSV) tables and used in the chemicals of interest (COI) screening process and other human health related evaluations. Further information concerning the nature of groundwater resources at the Site shall to be provided. In cases where a groundwater resource meets the criteria for more than one classification, 30 TAC 353.52 directs that the higher classification be used, unless approved otherwise by the Executive Director. For example, if Class 2 and 3 criteria apply for a groundwater source, the designation should be Class 2.
7. The Field Sampling Plan (FSP) and the Quality Control Project Plan (QAPP) shall be revised as appropriate to incorporate the comments regarding the RI/FS Workplan.
8. Screening out chemicals of potential concern based on background locations not approved for ecological and human health risk assessment purposes is inappropriate. According to EPA policy (2001), “comparison with background levels generally cannot be used to remove contaminants of concern owing to the need to fully characterize site risk.”
9. Texas Risk Reduction Program (TRRP) exposure factors for use in the human health risk assessment (HHRA) may be found in 30 TAC 350.74(a). Toxicity values, Protective Concentration Levels (PCLs) for affected media and other data relevant to the HHRA are available at <http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>
10. The Work Plan does not provide for obtaining additional data (i.e., toxicity tests and ecological tissue samples) for the ecological risk assessment regarding sediments. The sediment sampling data to be obtained under this Work Plan shall be compared to the ecological sediment screening values (i.e., the lowest of either the TCEQ Ecological Benchmark for Sediment, or the EPA EcoTox Threshold). Should any sediment sample exceed an ecological screening value, or any bioaccumulative chemical be detected above its sample quantitation limit, then the following testing shall be conducted:
 - a. Sediment toxicity testing shall be conducted at six (6) locations distributed over the wetlands area in the Site vicinity (both on and off-site), with a bias based on the drainage pathways from the Site and including sample locations distributed along the surface water flow gradient. A map showing the proposed sediment toxicity testing locations shall be submitted to EPA for approval. Analysis shall be conducted for any chemicals that exceed their sediment ecological screening levels, any detected bioaccumulative chemicals, or are frequently detected (i.e.,

detected in more than 50% of the soil or ground water samples at the Site). For salt water, ampelesca shall be used. For fresh water (if present) hyallela azteca shall be used. In addition, co-located sediment samples shall be collected at the same time and analyzed for the full suite of chemicals that are being evaluated in the toxicity test, including tri-butyl-tin.

- b. Ecological biological tissue testing shall be conducted for any chemicals that exceed their sediment ecological screening levels, any detected bioaccumulative chemicals, and all frequently detected chemicals (i.e., detected in more than 50% of the soil or ground water samples) except volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs).
 - (i) For the wetland areas in the vicinity of the Site, nine (9) biological tissue samples shall be collected from locations distributed over the wetlands, with a bias based on the drainage pathways from the Site and including sample locations distributed along the surface water flow gradient. Each sample shall be a composite sample of fiddler crabs.
 - (ii) For the barge slips or Intracoastal Waterway, six (6) forage fish (i.e., mullet, or fundulus, as available), whole body samples of the same species, shall be collected. Two samples of each species shall be collected from each barge slip, and two from the Intracoastal Waterway.

- 11. The Work Plan does not provide for obtaining additional data (i.e., toxicity tests and ecological tissue samples) for the ecological risk assessment regarding soils. The soil sampling data from the 0 to 6-inch interval to be obtained under this Work Plan shall be compared to the ecological soil screening values (i.e., the lowest of either the TCEQ Ecological Benchmark for Soil, or the EPA EcoTox Threshold). Should any such soil sample exceed an ecological screening value, or any bioaccumulative chemical be detected above its sample quantitation limit, then the following testing shall be conducted:

- a. Soil toxicity testing shall be conducted at six (6) locations distributed over the Site. A map showing the proposed soil toxicity testing locations shall be submitted to EPA for approval. Analysis shall be conducted for any chemicals that exceed their soil ecological screening levels and any detected bioaccumulative chemicals. Earthworm toxicity testing shall be used. In addition, co-located soil samples shall be collected at the same time and analyzed for the full suite of chemicals that are being evaluated in the toxicity test.
- b. Ecological biological tissue testing shall be conducted for any chemicals that exceed their soil ecological screening levels and any detected bioaccumulative chemicals. Eight (8) biological tissue samples of cotton rat (symodon), or other similar representative herbivore if sufficient cotton rat population is not present, and eight (8) biological tissue samples of shrews, or other similar representative insectivore if sufficient shrew population is not present, shall be collected from locations distributed over the Site where terrestrial habitat is present.

Specific Comments

1. *(Section 3.3, page 17-18, and Figure 8):* The conceptual site model for the southern portion of the Site does not include ecological receptors. The Work Plan shall be revised to add ecological receptors and all appropriate exposure pathways. Reptiles shall be identified as potential measurement receptors in models for both the northern and southern areas and evaluated.
2. *(Section 3.3, page 17):* There is agreement that the area to the north of Marlin Road is not utilized to the same extent that the area South of Marlin Road. However, a trespasser only scenario for the area North of Marlin road is not appropriate. The industrial worker scenario/construction scenario shall still be used in this area because the use of this land should also address potential future exposure scenarios.
3. *(Section 5.6 and subsections, pages 25-37):* The intended use of background samples is not clear, but screening-out chemicals as chemicals of potential ecological concern (COPECs) based on a comparison to background is inappropriate. Also, the criteria used to select background locations shall be provided.
4. *(Section 5.6.3.a, page 28):* The soil sampling program provides for sampling the surface to two-foot interval, but does not include provisions for determining the vertical extent of soil contamination. The TRRP defines surface soil for industrial property as the soil column from 0 to 5-feet below ground surface (bgs). Therefore, sampling of only the top two feet of the soil column may not provide a data set that is adequate to demonstrate health protectiveness under TRRP. The Work Plan shall be revised to collect additional soil samples below 2-feet if the 1-foot to 2-foot sample exceeds the screening levels, to a maximum depth of 5-feet bgs, and if the water table has not been reached. Also, in case offsite sampling is required to delineate contamination to residential PCLs, 0 to 15-feet bgs is considered to be surface soil for properties classified as residential under TRRP.
5. *(Section 5.6.3.b, page 28):* The Work Plan states that soil samples will not be collected from grid based locations falling within the wetland areas shown on Figure 3. Instead, sediment samples would be collected from these locations. All of the wetland areas shown on Figure 3 may not be wet. The Work Plan shall be revised to collect soil samples, at both depths, at these locations unless it is obviously observed to be a wet area. In that case, a sediment sample shall be collected at that location. Further, no 12-inch to 24-inch soil sample will be required if that depth is found to be wet.
6. *(Section 5.6.3, page 28):* The Work Plan does not provide for surface soil sampling for metals analysis on the off-site properties to the west. The Work Plan shall be revised to provide for this. Samples shall be collected from Lot 19 and Lot 20 from the shallow soil (i.e., depth interval 0 to 1-inch) on a 100-foot grid spacing with random locations within

each grid. These samples shall be analyzed for metals that were found to exceed either the human health or the ecological screening levels, whichever is lower, within any soil sample from Lot 21, Lot 22, and Lot 23 of the Site. Samples shall also be collected from the residential properties further west, on the west side of Snapper Lane, subject to acquisition of appropriate access agreements. For the residential properties west of Snapper Lane, a five-point composite sample shall be collected from the front yard of the property, a five-point composite sample shall be collected from the back yard, and a four-point composite sample shall be collected from the drip zone near the mid-point of each side of the residence on the property (for those properties containing a residence) in accordance with guidance in the EPA Superfund Lead-Contaminated Residential Sites Handbook (EPA, 2003). Composite samples shall also be collected from any distinct play areas and gardens present on the residential properties to be sampled. Should any of the residential properties exceed the residential human health screening values for soil, then additional residential properties shall be sampled until the extent of contamination is established.

7. *(Section 5.6.3.6, page 29):* The sentence “Ecological screening levels will not be used for the South Area per previous EPA technical discussions and because the industrial nature of the property does not provide suitable habitat” shall be deleted since the southern area does provide habitat, and ecological screening values shall be included for the southern area.
8. *(Section 5.6.3.g, page 29):* Utilization of TCEQ ecological screening benchmarks for soil shall include the most recent updates, as was indicated for surface water and sediment samples.
9. *(Section 5.6.3.g, page 29):* Any constituents detected will be carried forward into the baseline risk assessment regardless of how it compares to the background value. It is EPA’s policy to address background issues in the Baseline Risk Assessment rather than remove the constituent in the risk screening phase.
10. *(Section 5.6.5, page 30):* Evaluation of potential risks associated with ground water shall include the groundwater-to-sediment pathway as well as the described pathways. It shall be stated within the text if the groundwater-to-sediment pathway is being addressed as a component of the groundwater-to-surface water pathway, which is included in the text. All potential contaminant transport mechanisms must be thoroughly evaluated to determine if a complete pathway exists prior to elimination from ecological consideration.
11. *(Section 5.6.5, page 30-31):* The Work Plan proposes four permanent ground water monitoring wells on the perimeter of the former surface impoundment area. This spacing leaves large gaps in the former impoundment area, where the presence of dense non-aqueous phase liquids (DNAPL) is likely. Four additional ground water locations shall

be sampled around the perimeter of the former impoundment, either with direct push methods or monitoring wells.

12. *(Section 5.6.5, page 30-31):* The Work Plan does not include ground water sampling locations southwest of the dry dock area, and between Slip No. 2 and the former septic take area. Two additional ground water locations shall be sampled, one each in the referenced areas, either with direct push methods or monitoring wells.
13. *(Section 5.6.5.d, page 31):* The proposed analyte list for ground water samples is listed in Table 12 for each potential source area. Some of these areas do not include the full analyte list. All ground water samples shall be analyzed for the full analyte list, including VOCs, SVOCs, pesticides, PCBs, and metals.
14. *(Section 5.6.5.g, page 32):* The Work Plan includes provisions for determining the horizontal extent of ground water contamination, but does not include steps for determining the vertical extent. The next ground water zone below the uppermost water bearing zone shall be sampled for the chemicals that exceed the ground water screens in the uppermost water bearing zone. A minimum of three ground water samples shall be obtained from this next water bearing zone, and additional samples as necessary to determine extent. Each deeper water bearing zone shall be sampled until the ground water screens are not exceeded. The samples may be obtained either by direct push methods or monitoring wells. These samples shall be obtained outside of any DNAPL zone.
15. *(Section 5.6.5.i, page 33):* Site water level data and hydraulic testing shall be performed on any deeper water bearing zones that are found to contain contaminant concentrations above the ground water screening levels. This information shall be used to determine the ground water flow rate and direction for each water bearing zone.
16. *(Section 5.6.6, page 33):* The only surface water samples to be taken are from the northern area. Both human and ecological receptors will come into contact with the surface water on the southern portion of the Site. Surface water samples shall be taken at locations co-located with sediment samples taken in the slips and the Intracoastal Waterway (ICWW).
17. *(Section 5.6.8, page 36):* The Work Plan states that fish tissue will be sampled for sediment samples above the sample quantitation limit (SQL). This is acceptable only if the SQL is low enough to be compared to the appropriate screening values. Additionally, a comparison to background concentration levels shall not be used to justify the removal of potential constituents of concern in fish tissue. Background considerations can be addressed when a complete data set is available. The recommended background collection site does not appear to be reflective of background levels in the general area because the proposed collection location is at another barge docking site. The location of the background samples shall be such that it is reflective of background levels in the area.

18. *(Section 5.6.8, page 36):* The Work Plan states that J-flagged data will not be considered in the evaluation of Site related contaminants in fish tissue. Given that J-flagged data may provide a certain level of useful information for a risk estimation, notwithstanding the accompanying uncertainty, this data shall be used. Reporting of all analytical data and associated information is required under TRRP (30 TAC 350.54(h)).
19. *(Section 5.6.8, page 37):* The Work Plan proposes to include the fish and crab data in the RI Report and not in the Preliminary Site Characterization Report (PSCR). The fish and crab data shall be included in the PSCR Report since its purpose is to “describe the investigative activities” and provide a “preliminary reference for developing the Baseline Human Health and Ecological Risk Assessments.”
20. *(Section 5.7.1, page 40):* The Work Plan proposes to collect background fish samples if the estimated risks, based on fish tissue sampling, exceed EPA’s target risk range of 1-in-1,000,000 to 1-in-10,000. A risk within the target risk range may have a significant impact on the Site risks, and without background information it would not be possible to determine whether the contamination is Site related or not. The Work Plan shall be revised to provide for background fish sample collection if the estimated risks exceed 1-in-1,000,000.
21. *(Section 5.7.2, pages 42-43):* The Work Plan proposes a limited number of COPECs for the SLERA. Given the very limited amount of sampling information from this Site, the subsequent inability to develop representative concentrations, and the high quantitation limits compared to the screening levels, it is premature to screen out any chemicals as COPECs without enough samples to adequately characterize the nature and extent of contamination. A thorough delineation of contamination in all media at the Site shall be completed before COPECs can be eliminated from the SLERA. Also, previous SLERA comments on the inappropriateness of using SSI data to perform the risk assessment apply.
22. *(Table 12):* The welding area encompasses a large area with potentially multiple historic uses. This area shall be characterized with the full list of COPCs (i.e., VOCs, SVOCs, pesticides, PCBs, and metals) to account for uncertainty. If there is a smaller area associated with welding, it may be appropriate analyzed for metals and VOCs in this smaller area.
23. *(Table 12):* The former gasoline storage tank area soil sample location is the only one located in its sample grid block. That being the case, this soil sample shall be analyzed for the full analyte list, including VOCs, SVOCs, pesticides, PCBs, and metals.
24. *(Table 13):* Table 13 shall be revised to provide for the ecological evaluation of the southern portion of the Site.

25. *(Table 14):* Table 14 shall be revised to include the projected surface water and sediment samples from the northern and southern areas in order to be consistent with the text in earlier sections.
26. *(Tables 15-17):* Tables 15 through 17 include industrial PCLs as potential Preliminary Screening Values (PSVs). However, 30 TAC 350.71(k) directs that residential PCLs be used for screening the contaminants at a site. The guidance document TRRP 14: Screening Target Chemicals of Concern from PCL Development describes the screening procedures under TRRP; this and other guidance documents are available at: <http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>. Any site specific scenarios are incorporated in the Baseline Risk Assessment rather than in the screening phase of the risk assessment.
27. *(Tables 15-17):* In some cases, the lowest, most conservative screening concentration for a given COI is not identified as the PSV in Tables 15 and 16 (e.g., antimony and endrin in Table 16). Also, some of TCEQ's published PCLs appear to be missing from Tables 15 through 17 and 19 (e.g., thallium, dichloroethylene and γ -chlordane). These tables shall be checked for accuracy and revised to include the lowest, most conservative screening concentration for all COIs, and shall be revised to include all of TCEQ's published PCLs, available in the Tier I PCL tables at: <http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>.
28. *(Table 16):* The table does not include the ecological soil screening values for the southern part of the Site. These screening values shall be added to the Table 16 to make it consistent with Table 15.
29. *(Table 17):* This table does not include a water ecological benchmark for PCBs, yet Table 3-2, Ecological Benchmarks for Water (TCEQ), includes a benchmark for PCBs and Aroclors. The marine benchmark for PCBs is 0.00003 mg/L. Table 17 shall be revised to include this benchmark.
30. *(Table 17):* The maximum contaminant level (MCL), or an alternate drinking water screening value, shall be included as a potential preliminary screening value for ground water. Even though the uppermost ground water is salty, fresh ground water is known to exist at about 200-feet bgs, and may exist at shallower depths. Depending on the vertical extent of the ground water contamination, a drinking water zone may be impacted.
31. *(Table 18):* Table 18 includes only the TCEQ Ecological Benchmark for Water as a potential PSV. Human exposures to affected surface water shall also be considered by inclusion of the Surface Water Risk Based Exposure Level (SWRBEL) in the table. SWRBELs are available at: <http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>. The table shall also include the Texas Surface Water Quality Standards.

32. *(Table 19):* This table does not include a sediment ecological benchmark for PCBs, yet Table 3-3, Ecological Benchmarks for Sediment (TCEQ), includes a benchmark for Total PCBs. The marine sediment benchmark for PCBs is 0.0227 mg/kg. Table 19 shall be revised to include this benchmark.
33. *(Figure 6 and Figure 7):* The human health exposure scenario should be consistent on the North and South sides of the Site. Future exposure scenarios on the North side of the facility can not be limited to trespassers. If the property is sold the industrial exposure scenario may apply to this area in the future and therefore shall be addressed in the same manor as the South side of the facility.
34. *(Figure 6 and Figure 7):* The purpose of the CSM is to describe the pathways that will be evaluated in the risk assessment, not indicate which pathways are indeterminate due to limited data. The CSM shall address both the currently listed completed pathways as well as the indeterminate pathways (as data gaps are filled these pathways shall be evaluated).
35. *(Figure 6 and Figure 7):* Contact with soil shall be one of the primary media of potential exposure (contaminated soil shall be listed as a release mechanism).
36. *(Figure 6 and Figure 7):* The air pathway does not address the potential for vapor intrusion. The CSMs shall be revised to include this.
37. *(Figure 10):* The process flow chart indicates that the initial round of sampling will be scaled back to only those constituents listed as a COI for each area. There are a few areas in which the COI list must be revisited to incorporate earlier recommendations for the suite of constituents to be analyzed. Specifically, discussions during the scoping meetings indicated that the full suite of constituents would be evaluated on a grid pattern in addition to area specific samples looking for specific COI. In areas like the welding area, it does not appear that any grid samples will be collected. This is a fairly large area and therefore shall not be limited to only addressing metals and VOCs. There are other potential historic releases to an area of this size.

FIELD SAMPLING PLAN (FSP) COMMENTS

General Comments:

1. The southern portion of the Site shall be fully evaluated for ecological risk during the RI/FS by screening sampling data against ecological benchmarks.
2. The FSP proposes to limit COIs based on previously collected data. COIs shall not be eliminated strictly based on the SSI and other previously collected data. Therefore, it premature to limit analysis of samples for the welding potential source area (PSA) to metals and VOCs, to limit the electrical shed PSA to PCBs only, and the former gasoline storage tank PSA to VOCs and metals only. In addition to the proposed samples, these

PSAs shall be sampled such that VOC, SVOC, pesticides, PCBs, and metals samples are obtained at locations that are consistent with, and leave no gaps in, the 100-foot grid approach for the southern part of the Site.

3. The preceding RI/FS Work Plan comments shall be applied to the draft Sampling and Analysis Plan - FSP as appropriate.

Specific Comments:

1. (*Section 2.4, page 5*): The RI/FS shall look at a broad range of potential constituents prior to narrowing down to a list of Site wide COIs. The term COI implies a narrow list of suspected Site contaminants rather than the broader range of sampling analytes required in this sampling effort. The FSP shall be revised to provide a complete list of COI's. The FSP shall also be revised to use the chemical terms as defined in Risk Assessment Guidance Document for Superfund (RAGS) (i.e., chemicals of potential concern (COPC) and chemicals of concern (COC)).
2. (*Section 3.7, page 14-15*): As mentioned above in comments on the RI/FS Work Plan, co-located sediment samples and surface water samples shall be taken in the slips and ICWW, including Lot 21.
3. (*Section 3.8 and Section 3.9, page 15-17*): The background sediment and fish tissue samples appear to be located next to a barge slip. This is not an appropriate location to establish a background sample as it may detect site related contamination specific to that slip area. Samples in the canal shall be taken either northeast or southwest of the barge slip rather than right next to the barge slip (See Figure 10).
4. (*Section 5.8, page 31*): The FSP proposes to homogenize the marsh sediment samples. This mixing of a sample may reduce the VOC concentration due to evaporation. The FSP shall be revised so that samples for VOC analysis will not be homogenized.
5. (*Table 2*): This table does not provide the chemical analysis planned for the ground water sample from the Former Product Storage Tank Area. The FSP shall be revised to provide this.
6. (*Section 5.7, page 29*): The FSP states: "A single surface water sample is proposed for collection at each site." Duplicates of surface water samples are required for QA/QC purposes. The FSP shall be clarified that this will be the case at the Site.
7. (*Appendix B: Method Selection Worksheets*): The tables in Appendix B list the COIs for the analysis methods. Octachlorostyrene is not included in the COI lists. According to the Screening Level Ecological Risk Assessment for the Dow Chemical Company Freeport Site, dated June 30, 2005, octachlorostyrene is a SVOC that was detected in the Freeport Site study area and was potentially bioaccumulative in surface water and

sediment based on its octanol-water partition coefficient. As Dow is a generator for the Gulfco Site, octachlorostyrene shall be added to the COI lists for SVOCs in soil, surface water, ground water, sediment, and fish tissue (if detected in the sediment).

QUALITY ASSURANCE PROJECT PLAN (QAPP) COMMENTS

General Comment:

1. The preceding RI/FS Work Plan and FSP comments shall be applied to the draft Sampling and Analysis Plan - QAPP as appropriate.

Specific Comments:

1. *(Table 1, page 2 of 3):* The QAPP states that the horizontal boundaries of the soil study are the property boundaries and the Intracoastal Waterway, and that the vertical soil boundaries are a depth of 2-feet. The horizontal and vertical boundaries of the soil study shall include the full extent of contamination, to the appropriate screening level, which may extend beyond the property boundaries and deeper than 2-feet bgs. The QAPP shall be revised accordingly.
2. *(Table 2, page 2 of 2):* The QAPP states that the vertical boundary of the ground water study is the base of the uppermost water-bearing unit. The vertical boundary of the ground water study shall include the full extent of contamination, to the appropriate screening level, which may extend below the uppermost water-bearing unit. The QAPP shall be revised accordingly.
3. *(Appendices A & D; Tables A-2 and D-2):* The tables shows that no preservation is required for metals analysis of soil/sediment samples. According to “Engineering & Design Requirements for the Preparation of Sampling & Analysis Plans” (EM 200-1-3, 2/1/2001), Table B-1, soil/sediment samples for metals analysis should be preserved by cooling to 4 °C. The QAPP shall be revised to include cooling to 4 °C, unless an acceptable reference can be provided for no preservation of these samples.
4. *(Appendix A & D; Tables A-2 & D-2):* The tables shows that the holding time for chromium VI analysis of soil/sediment samples is 30 days (preparation) and 4 days (analysis). According to “Engineering & Design Requirements for the Preparation of Sampling & Analysis Plans” (EM 200-1-3, 2/1/2001), Table B-1, the soil/sediment sample holding time for chromium VI analysis should be 24 hours. The QAPP shall be revised to include a holding time of 24 hours, unless an acceptable reference can be provided for the proposed holding time.